

WEATHER OF THE MONTH.

WEATHER OF NORTH AMERICA AND ADJACENT OCEANS.

NORTH ATLANTIC OCEAN.

By F. A. YOUNG.

The average pressure for the month was slightly below the normal at land stations on the coasts of Newfoundland and Nova Scotia, as well as in the southern part of Ireland and the Azores; it was somewhat higher than usual on the coast of the United States, south of Nantucket, and in the Gulf of Mexico, and on the east coast of England, while the positive departures were large over the northern part of Scotland.

According to reports received the number of days on which gales were reported was not far from the normal over the entire ocean.

The number of days with fog was apparently considerably less than usual over the Great Banks, American coast, and the greater part of the steamer lanes, while it was considerably above the normal in the vicinity of the British Isles, as in the 5° square that includes the southern part of England it was reported on 18 days.

On the 2d there was a disturbance of marked intensity central near latitude 50, longitude 35. This low moved rapidly eastward increasing in intensity, and on the 3d the center was about 300 miles west of the Irish coast, as shown on Chart IX.

The storm logs from different vessels are as follows:

Gothland, Belgian S. S.: Gale began on the 2d. Lowest barometer 29.50 inches at midnight on the 2d; position, latitude 48° 50' N., longitude 30° 50' W. End of gale on the 4th. Highest force of wind, 12; shifts of wind near time of lowest barometer WSW.-W.-WNW.-NW.

Stanmore, British S. S.: Gale began on the 2d. Lowest barometer 28.85 inches at 4 a. m. on the 3d; position, latitude 50° 16' N., longitude 29° W. End of gale on the 5th. Highest force of wind 12; shifts of wind not given.

Arkansas, Danish S. S.: Gale began on the 3d. Lowest barometer 28.67 inches at 1 p. m. on the 3d; position, latitude 55° 12' N., longitude 26° 55' W. End of gale on the 4th. Highest force of wind, 11; shifts of wind, none.

Chart X, for October 4, shows that this disturbance moved but little during the next 24 hours, while it decreased somewhat in intensity and the storm area in extent. On the 5th the low was in nearly the same position as on the previous day, and was fast filling in, winds of from force 2 to 6 prevailing, except that in the southwest quadrants a few vessels experienced moderate northwesterly gales.

On the 1st, 3d and 4th fog was reported off the east coast of England and on the 1st and 4th in the vicinity of Newfoundland, and on the 5th, over the Grand Banks and at Halifax and Sydney, N. S. On the 6th, fog was encountered in the middle section of the steamer lanes, and on the 7th between the 40th and 45th parallels, and the 35th and 45th meridians. On the latter date a few reports of moderate gales were received from mid-ocean, and on the latter date the American S. S. *El Almirante* ran into a northerly gale off the coast of Georgia. Her storm log is as follows:

Gale began on the 6th. Lowest barometer 29.88 inches at 4 a. m. on the 9th; position, latitude 35° 55' N., longitude 75° W. End of gale at 3 p. m. on the 9th. Highest force of wind, 11; shifts of wind N. by E.-NE.

On the 8th and 9th conditions were about the same as on the 7th, except that the moderate disturbance over the steamer lanes drifted slowly eastward, as on the 9th

the center was about 300 miles west of the Irish coast, while southerly gales prevailed over a limited area in the easterly quadrants, on both days. Fog was reported over the western part of the steamer lanes on the 7th and over the British Island on the 8th and 9th.

On the 10th and 11th moderate weather was the rule over the entire ocean, except that on the latter date a few reports were received from vessels between the Azores and the Irish coast, that experienced moderate gales.

On the 12th there were two disturbances, the first being central near latitude 46°, longitude 52°, and the second near latitude 50°, longitude 15°. Both of these lows moved but little during the next 24 hours and decreased in intensity. The storm log from the British S. S. *Lancastrian* is as follows:

Gale began on the 11th. Lowest barometer 29.11 inches at 10 p. m. on the 11th; position, latitude 49° 30' N., longitude 18° 22' W. End of gale on the 13th. Highest force of wind, 9; shifts of wind NE.-E.-SE.-SSW.-S.

On every day from the 14th to the 28th, inclusive, fog was reported by some land station in England or Scotland, and on the 23d, 27th, and 28th, by vessels on the Grand Banks.

On the 15th and 16th there was a low central near the 45th parallel and 45th meridian, that afterwards developed into an exceptionally severe disturbance, as shown on Charts XI, XII, and XIII for October 17, 18, and 19, respectively.

Storm logs are as follows:

Oskaloosa, American S. S.: Gale began on the 16th. Lowest barometer 29.35 inches at 3 a. m. on the 18th; position, latitude 49° 37' N., longitude 23° 20' W. End of gale on the 19th. Highest force of wind, 10; shifts SE.-S.-SSW.

Direction and force of wind and barometer readings recorded by the observer, on this vessel at different hours for the 17th and 18th are as follows:

October 17, 4 p. m., SSE.; force 9, 29.60 inches; 8 p. m., SE., force 9, 29.54 inches; midnight, SE., force 9, 29.45 inches; October 18, 3 a. m. south, force 9, 29.35 inches; 4 a. m., south, force 8, 29.41 inches; 8 a. m., SSW., force 5, 29.44 inches.

Barometer remained nearly stationary for next 24 hours, wind increasing to force of 9.

Inkula, British S. S.: Gale began on the 16th. Lowest barometer 29.05 inches at midnight on the 17th; position, latitude 46° 46' N., longitude 41° 54' W. End of gale on the 19th. Highest force of wind 12; shifts of wind NNW.-NNE. and back to N.

Lucigen, British S. S.: Sunday, October 17, latitude 50° 13' N., longitude 20° 51' W. Wind freshened from south, barometer at noon 30.10 inches; 4 p. m., apparent ship's time, 29.84 inches. By 8 p. m. the wind had reached gale force, with heavy sea running, and the barometer continued to fall until midnight October 18, when it was steady at 28.78 inches with no abatement in either wind or sea, and these conditions prevailed throughout the following day. On the 20th at 10 a. m. the wind shifted to NW., the barometer having risen to 29.18 inches. The wind, however, still maintained gale force with heavy rain squalls until midnight; it then came in squalls, each being less severe. At 8 a. m. October 21 the wind was quite moderate. Barometer 29.36 inches.

On the 20th this disturbance was in practically the same position as on the previous day, and it had decreased somewhat in intensity, and the storm area contracted in extent. The storm log of the *Hanover*, American S. S., follows:

Gale began on the 20th. Lowest barometer 29.28 inches at 9 a. m. on the 20th; position, latitude 46° 05' N., longitude 24° 45' W. End of gale on the 21st. Highest force of wind, 10; no shifts.

By the 21st this low had apparently drifted northward, though not enough observations have been received to determine the position accurately. On the 21st and 22d a few reports were received denoting moderate gales in mid-ocean on the former date, and in the eastern section of the steamer lanes on the latter.

On the 23d there was a low central off the east coast of Newfoundland, and a few vessels in the southwesterly quadrants encountered moderate northwesterly gales. This disturbance moved rapidly eastward and on the 24th was central near the 50th parallel and 40th meridian as shown on Chart XIV. During the next 24 hours the easterly movement of this low was comparatively slight, with decreasing intensity and gradual filling in. Storm logs are as follows:

Rotterdam, Dutch S. S.: Gale began on the 24th. Lowest barometer 28.75 inches at midnight on the 24th; position, latitude 50° 03' N., longitude 16° 06' W. End of gale on the 25th. Highest force of wind, 10; shifts S.-SSW.-NW.-WNW.

Northern Pacific, United States S. S.: Gale began on the 24th. Lowest barometer 28.98 inches at 5 a. m. on the 24th. Position, latitude 46° 50' N., longitude 40° 41' W. End of gale on the 24th, 11 p. m. Highest force of wind, 11; shifts 7 points to NW. at noon on the 24th.

Grampian Range, British S. S.: Gale began on the 23d. Lowest barometer 29.31 inches at 11.30 p. m. on the 23d; position, latitude 44° 00' N., longitude 45° 44' W. End of gale on the 25th. Highest force of wind, 11; shifts W-NW.

From the 26th to the 28th the conditions were comparatively featureless, with slight pressure gradients and light to moderate winds over practically the entire ocean.

On the 30th a low was central off the west coast of Ireland and reports were received from vessels between the twenty-fifth and thirtieth meridians that encountered moderate to strong northwesterly gales. This disturbance moved slowly eastward, increasing in intensity, and on the 31st the center was in the Irish Channel, while northwesterly gales prevailed over the territory between the forty-fifth and fifty-fifth parallels and the tenth and twenty-fifth meridians. Storm logs are as follows:

Venusia, British S. S.: Gale began on the 29th. Lowest barometer 29.64 inches on the 29th; position, latitude 53° 37' N., longitude 30° 09' W. End of gale on the 31st. Highest force of wind, 10; no shifts.

Eibergen, Dutch S. S.: Gale began on the 30th. Lowest barometer 29.37 inches on the 30th. Position, latitude 50° N., longitude 16° 45' W. End of gale on the 31st. Highest force of wind, 10; steady from NW.

NORTH PACIFIC OCEAN.

By F. G. TINGLEY.

The closing days of September saw further typhoon activity in Asiatic waters, which continued into October. According to a report by Father Coronas, Chief of the Forecast Division of the Philippine Weather Bureau, which appeared in the September MONTHLY WEATHER REVIEW, a well developed and severe typhoon swept the Pacific between the Ladrones and the Loochoos from September 22 until the end of the month.

The British S. S. *Uncas*, Hong Kong (Sept. 23) for San Pedro, was involved in this storm on September 30 and October 1 when off the southeastern coast of Japan, the center of the storm passing over the ship during the early morning hours of the latter date.

Mr. G. F. Leechman of the *Uncas* has furnished the accompanying interesting graph (Fig. 1) prepared from readings of the ship's aneroid barometer, showing the pressure fluctuations during the passage of the typhoon,

together with the following account of the weather experienced.

September 30.—Noon, strong wind from SSE., squally, rough sea, high S'y swell; 8 p. m., moderate gale, violent squalls, high sea, overcast and dull; midnight, whole gale, terrific squalls of long duration, mountainous seas, heavy rain from 10 p. m.

October 1.—2:30-3:20 a. m., wind drops to force 4 and shifts to S., 10 minutes later backs to SE., and after changing variously finally blows from WNW.: confused seas, 60 to 70 feet high, isolated and seldom breaking; low misty clouds, occasional rifts, foggy. 8 a. m., strong wind (6, WSW.), high tumbling seas, cloudy sky, clear.

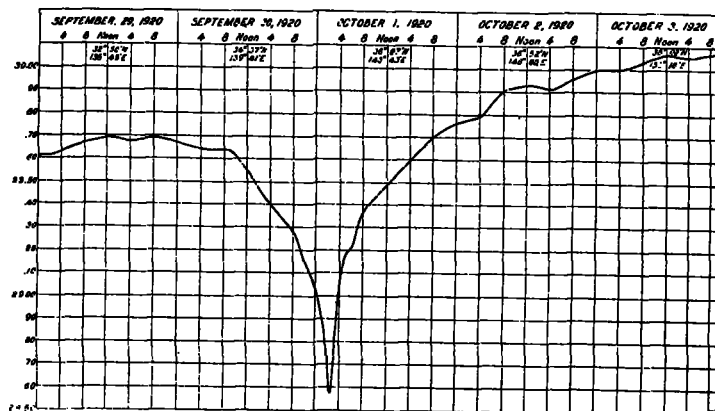


FIG. 1.—Typhoon of Sept. 29-Oct. 3, 1920, off the south and east coasts of Japan. Readings (corrected) of aneroid barometer on British S. S. *Uncas*. Time indicated is apparent time at ship. Duration of center, 50 minutes; approximate diameter, 10 to 15 miles.

The positions of the *Uncas* are shown in the figure.

The Japanese S. S. *Fushima Maru*, Capt. M. Machida, Yokohama (Sept. 28) for Victoria, experienced heavy weather in the same storm. Its influence was first felt on the 30th, the vessel on that date (at 10:04 p. m., 1 m. t.) being in latitude 41° 21' N., longitude 151° 07' E. The lowest pressure recorded was 29.33 inches, which occurred at 4 a. m. of October 2, when in latitude 44° 26' N., longitude 157° 58' E. Highest force of wind 10; shifts of wind, SSE., S., SSW., SW.

At the beginning of the month a pronounced depression was central over southeastern Alaska and was causing westerly gales over the northern steamer route between the mainland and the Aleutians. This depression was one of a series which during the period from September 24 to the end of the month had moved from Bering Sea across southwestern Alaska.

The British S. S. *Methven*, Capt. H. James, Yokohama for Vancouver, was more or less involved in these storms between longitude 170° W. and 135° W., from September 26 to October 1, experiencing during the whole of this period westerly gales with fierce squalls and very high seas.

Aside from the tropical storms in Asiatic waters the principal disturbance of the month, as affecting shipping, was that of the last decade, which throughout the entire period from the 20th to the end of the month remained almost stationary over southwestern Alaska, causing shifting gales over the eastern portion of the northern steamer route. So far as the effects of this depression on shipping were concerned it appears to have reached its greatest intensity during the last three days of the month.

On the 29th the Japanese S. S. *Arabia Maru*, Capt. T. Saito, Yokohama for Victoria, when in latitude 49° 40' N., longitude 154° 30' W., recorded a pressure of 28.94 inches. This reading is apparently subject to a correction of about +0.15 inch. Highest force of wind 11, from SW. Shifts of wind, E. by N. to SW. On the 29th